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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,727	02/15/2002	David F. Gavin	101792-200	2648
27267	7590	01/06/2009	EXAMINER	
WIGGIN AND DANA LLP ATTENTION: PATENT DOCKETING ONE CENTURY TOWER, P.O. BOX 1832 NEW HAVEN, CT 06508-1832			WESSENDORF, TERESA D	
			ART UNIT	PAPER NUMBER
			1639	
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			01/06/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/077,727

Applicant(s)

GAVIN ET AL.

Examiner

TERESA WESSENDORF

Art Unit

1639

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2, 4, 6-9, 11, 36, 40 and 41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2, 4, 6-9, 11, 36-36, 40-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/11/08 has been entered.

Status of Claim

Claims 2, 4, 6-9, 11, 35, 36, 40 and 41, as amended, are pending and under examination.

Withdrawn Rejection

In view of the amendments to the claims and applicants' arguments the 35 USC 112, first paragraph (new matter) and second paragraph rejections have been withdrawn.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112, Second Paragraph

Claims 2, 4, 6-9, 11,35, 36, 40 and 41, as amended, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. Claim 1 is indefinite as to the "portion of copper of the core" that reacts with pyrithione i.e., whether the portion refers to the amount/concentration or what constitutes the differentiating feature of portion of a core.

2. Non-sequitur for "the total weight" of said composition in claim 4 and claims 6-9; "the core **material**" in claim 35; "the weight ratio", e.g., claim 36.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 2, 4, 6-9, 11, 35, 36, 40 and 41, as amended, are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over e.g., claim 3 of U.S. Patent No. 7026308 ('308 Patent). Although the conflicting claims are not identical, they are not patentably distinct from each other because the '308 Patent is an obvious variant of the instant claimed composition. Claim 3, for example of the '308 Patent recites a composition comprising a polyvalent metal salt of pyrithione selected from the group consisting of zinc pyrithione, copper pyrithione, and mixtures thereof. The instant composition uses the terms shell and core to describe the components of the composition as pyrithione and copper, respectively. The similar components, if not the same, pyrithione and copper is disclosed by '308 Patent. Thus, the form by which the components exist in a composition is immaterial as the components of the composition are similar, if not the same. The '308 Patent discloses throughout the patent

that the polyvalent metal salts of pyrithione are known to be effective biocidal agents and are widely used as fungicides and bacteriocides in paints and metalworking fluids. Polyvalent metal salts of pyrithione are also used as fungicides and bacteriocides in personal care compositions such as foot powders and anti-dandruff shampoos. The polyvalent metal salts of pyrithione are only sparingly soluble in water and include, inter alia, copper pyrithione. '308 Patent discloses that the metal ion source is present in the composition at a ratio to polyvalent metal salt of pyrithione of from about 5:100 to about 5:1; preferably from about 2:10 to about 3:1; more preferably from about 1:2 to 2:1.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action: A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in- (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 4, 6-9, as amended, are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hosseini et al. US Pat. No. 5,540,860 (7/96) alone or if necessary further in view of the specification {e.g. page 7, figures (e.g. fig. 2) and examples (e.g. example 1) to demonstrate inherency (e.g. see Exparte Novitski, 26 USPQ2d 1389 (B.P.A.I, 1993); MPEP 2131.01(d). Hosseini teaches a "biocidal composition" (e.g. see col. 1,

especially lines 45-50) comprising "particles" of "copper pyrithione" formed by aqueous mixing: (a). "a copper compound" (e.g. a "copper salt" such as copper chloride or copper sulfate) and (b), "a pyrithione salt" (see col. 2, example 1). The Hossein et al. method teaches the use of pyrithione salts between about 1 to about 40% (based on total composition weight), between 5 and 25% and 15 and 25% (e.g. see Hossein at col. 2, especially lines 54-60)which anticipates, or alternatively renders obvious the percentage amounts of copper pyrithione adduct shell of present claims 7- 9, respectively. since the reference amounts are within the scope of the claimed amounts. The Hossein teaching of "between about one and about 40% of the pyrithione salt" would anticipate or render obvious the corresponding copper/copper compound amount of "about 99% to about 60%" as presently claimed in claim 4; and additionally, the proportions of the Hossein components (e.g. see bottom of col.2) are within the scope of the wide ratio proportion (1:20 to 20:1) of core/shell ingredients. Hosseini teach the optional surfactant coating of its particles (e.g. see col. 2, lines 10-17). To the extent that the Hossein reference biocidal copper pyrithione (e.g. spherical) particles differ by failing to explicitly teach the physical nature of the resulting particle e.g. a copper pyrithione "shell" and copper/copper compound

"core" such a physical arrangement MUST be inherently present in the Hossein particles since: (a). The Hossein particles are composed of the same ingredients and in the same amounts as the presently claimed particles; (b). The Hossein particles are formulated in the same manner (compare patent example 1 and specification example 1) are shaped and sized (e.g. spherical and about 2-15 micron diameter) as particles disclosed in the present specification(e.g, see columns 2 and 7 of the reference and compare to specification page 7 and specification figure 2) ; and c. In light of the specification disclosure which teaches that a composite particle containing a metal (e.g., copper) "core" coated with a copper pyrithione "shell" results upon aqueous mixing a copper compound and a pyrithione salt (e.g. sodium pyrithione as found in both the reference and specification example) followed by the precipitation protocol. Where the claimed and prior art products are identical or substantially identical in structure or composition (as in the present case) AND/OR is produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the appellant and the prior art are the same, the appellant has the burden of showing

that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). For a chemical composition and its properties are inseparable. Therefore, since the prior art teaches the identical or substantially identical chemical structure, the properties appellant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990); and MPEP 2112.01. The PTO lacks the facilities for making comparisons between prior art and claimed compositions.

Claims 2, 4, 6-9, 11 and 41, as amended, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosseini et al. '860 alone or in view of the specification (e.g. page 7, figures (e.g. fig. 2) and examples (e.g. example 1) to demonstrate inherency and Gavin et al. US Pat. 5,342,437 (8/94). The substance of the 102/103 rejection of claims 2, 4 and 6-9 over Hosseini et al. alone or in view of the specification is herein incorporated by reference in its entirety. The Hosseini et al. particles differ from composition of claim 11 and claim 41 by failing to teach utilizing a "fatty acid coating" (e.g. stearic, linoleic, oleic etc.). In this regard, Hosseini et al. Reference (e.g. see col. 1) teaches that pyrithione salts in the form of crystals (e.g. platelets) are incorporated into manufacturing articles including paints (e.g., coating compositions); with the

problem of "gellation" during the production of copper pyrithione solution or dispersion occurring. The Hosseini solution to the gellation problem is to "surfactant coat" its copper pyrithione particles. However Gavin et al. teach that incorporating fatty acids(e.g., stearic, linoleic, oleic etc.) into its pyrithione compositions (e.g. zinc pyrithione/cuprous oxide) prior to incorporation into manufacturing articles (e.g. coating compositions such as paints) solves the gellation problem. Accordingly, one of ordinary skill in the art at the time of applicant's invention would be motivated to apply a "fatty acid" particle coat, in addition or, in lieu of the "surfactant coat" in order to address the gellation problem. Thus, it would have been prima facie obvious to one of ordinary skill in the art at the time of applicant's invention to modify the Hosseini et al. reference particle to apply a "fatty acid" coat in light of the Gavin reference teaching that to do so would address the gellation problem recognized by both the Hosseini and Gavin references.

Claims 2, 4, 6-9, 35-36 and 40, as amended, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosseini et al. '860 alone or in view of the specification (e.g. page 7, figures (e.g. fig. 2) and examples (e.g. example 1) to demonstrate inherency and Kappock et al (US Pat. 5,518,774)

(5/96). The substance of the 102/103 rejection of claims 2, 4 and 6-9 over Hosseini et al. alone or in view of the specification is herein incorporated by reference in its entirety. The Hosseini et al. spherical particles differ from the presently claimed invention by failing to explicitly teach: (a). selection of "copper oxide" as the metal ion containing compound for use with the pyrithione salt to form copper pyrithione (claim 35); and (b). Copper oxide/copper pyrithione ratio of 5:1 to 15:1 or 10:1 with a "diameter of the coating material" about 1% of the "idealized spherical particle". (claims 36 and 37). Kappock et al. teach that "transchelation" of a soluble pyrithione salt (such as sodium pyrithione) with a metal ion-containing compound to form insoluble pyrithione salts afford an excellent combination "in can" and "dry film" antimicrobial protection to an aqueous coating (e.g., paint) composition. (E.g. see col. 2, lines 30-40). Preferred metals include copper in the form of "copper oxide" or "copper sulfate" with a copper oxide/copper pyrithione ratio of "between about 1:10 and about 10:1"; in which the amount of metal ion compound can vary (e.g..001% or lower to 10% or greater, preferably between 0.005% and 1%) and include optimization so as to enable complete conversion of the pyrithione salt by transchelation to metal pyrithione during storage of the coating composition. See

Kappock et al. Col. 2-3, especially col. 3, lines 12-32; patent claims 4-8. Accordingly, the Kappock reference would provide motivation to one of ordinary skill in the art to modify the Hosseini copper pyrithione solid particle (e.g. for use in a coating composition such as paint) by substituting copper oxide for the Hosseini copper salt (e.g. copper sulfate: col. 2, lines 58-66) since: a). The references' teaching of functional equivalency of copper oxide and copper sulfate since both references teach copper sulfate but Kappock further utilized copper oxide; and b). In view of the benefits taught by the Kappock reference of utilizing copper oxide e.g. excellent combination "in can" and "dry film" antimicrobial protection to an aqueous coating (e.g. paint) composition. Similarly, the Kappock reference provides one of ordinary skill in the art with copper oxide/copper pyrithione ratios (e.g., about 10:1) with additional motivation to optimize (e.g. enable complete conversion of the pyrithionie salt to metal pyrithione) to achieve amounts within the scope of the presently claimed invention of 5:1 to 15:1 or 10:1 with a "diameter of the coating material" about 1% of the "idealized spherical particle". Thus it would have been prima facie obvious to one of ordinary skill in the art to modify the Hosseini et al. spherical particles by a). selecting "copper oxide" as the metal ion containing

compound for use with the pyrithione salt to form copper pyrithione (claim 35); and b). utilize copper oxide/copper pyrithione ratio of 5:1 to 15:1 or 10:1 within the scope of the presently claimed invention (e.g., claims 35-36 and 41).

Regarding the claimed limitation "diameter of the coating material" about 1% of the "idealized spherical particle" (claims 36 and 37) it is noted that: a). Modification of the Hosseini et al. reference in view of the Kappock reference teaching would result in the "spherical particles" which contain the same components in the same amounts as the presently claimed invention which are made in an analogous manner. In this regard, it is noted that where the claimed and prior art products are identical or substantially identical in structure or composition (as in the present case) AND/OR is produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the appellant and the prior art are the same, the appellant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). For a chemical composition and its properties are inseparable. Therefore, since the prior art teaches the identical or substantially identical

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chemical structure, the properties appellant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990); and MPEP 2112.01. The PTO lacks the facilities for making comparisons between prior art and claimed compositions.

"[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."); In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969). For more recent cases applying this principle, see Merck & Co. Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert.denied, 493 U.S. 975 (1989); In re Kulling, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997). See MPEP 2144.05.

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual

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application is beyond his or her skill. When considering obviousness of a combination of known elements, the operative question is thus "whether the improvement is more than the predictable use of prior art elements according to their established functions." KSR International Co. v. Teleflex Inc., 550 USPQ2d 1385 (2007).

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa Wessendorf whose telephone number is (571)272-0812. The examiner can normally be reached on flexitime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached on 571-272-0951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TERESA WESSENDORF/
Primary Examiner, Art Unit 1639

Application Number**Application/Control No.**

10/077,727

**Applicant(s)/Patent under
Reexamination**

GAVIN ET AL.

Examiner

TERESA WESSENDORF

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